

REMARKS

Claims 1, 2, 4, 10 and 21 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

With respect to claims 1, 2, and 4, the Examiner objects to the term "able." Applicants have amended these claims to address the issue noted by the Examiner.

With respect to claims 2, 4, 10 and 21, the Examiner objects to the term "around." Applicants have amended these claims to address the issue noted by the Examiner.

Claims 1 and 9 were rejected under 35 U.S.C. 102(b) as being anticipated by Tomasz. Applicants respectfully traverse and request reconsideration.

Claim 1 recites "an integrated circuit embodied on a monolithic substrate." Claim 1 goes on to recite that the "integrated circuit," which is embodied on that monolithic substrate, includes both "a tuning module" and "several channel decoding digital modules connected at an output of the tuning module." Thus, claim 1 clearly requires the presence of a "tuning module" and multiple "channel decoding digital modules" in the integrated circuit which is "embodied on a monolithic substrate."

Tomasz teaches a single conversion type receiver. The tuning module utilizes a first integrated circuit chip 64 (one substrate) and includes the components needed to convert the signal to baseband. That baseband signal is then output to a second integrated circuit chip 100 (a second/different substrate) for A/D conversion. A third integrated circuit chip 78 (yet another/different substrate) forms the digital signal processor of the receiver which operates on the digital output of the A/D converter.

Claim 1 requires an integrated circuit, including the tuning module and several channel decoding digital modules, be embodied on a monolithic substrate. The Examiner points to Tomasz col. 2, lines 58-60 as meeting this limitation. However, this teaching refers only to the receiver process used to get to analog baseband signals, and does not suggest placing "several channel decoding digital modules" on that same (monolithic) integrated circuit substrate 64 used for the tuner in Tomasz. The digital processes in Tomasz are, in fact, performed on separate integrated circuits 100 (A/D conversion) and 78 (DSP) embodied with separate and different substrates. Thus, multiple monolithic substrates are used by Tomasz for different circuits. Tomasz does not anticipate claim 1.

If fact, it would appear that the teachings of Tomasz are no different than the designs described by Applicants as being in the prior art. See, paragraph 7 of the specification wherein Applicants discuss the use of different semiconductor substrates for different circuits (for example, tuner integrated on one substrate and the demodulator/decoder on another substrate). The claimed invention as recited in Claim 1 provides for the tuning module and several decoding modules to be integrated on a monolithic substrate. This physical implementation is neither disclosed nor suggested by Tomasz, and the disclosure of separate integrated circuits for A/D converter 100 and DSP 78 would teach away from the claimed invention.

The Examiner, with respect to the "embodied on a monolithic substrate" limitation, points to Tomasz col. 2, lines 59-62. The cited portion of Tomasz relied upon by the Examiner says "the DBS signal delivered to the set-top box is directly converted from the received frequency to baseband, in the preferred embodiment by a single integrated circuit." It will be noted that this teaching refers ONLY to the direct conversion of the signal from the received

frequency to baseband. In this regard, this teaching refers to the "integrated circuit 64 of the present invention" (col. 3, lines 18-19) which is the downconverter circuit ONLY. Again, as discussed above, the other processing circuits in Tomasz, such as A/D converter 100 and digital signal processor 78, are performed by other, separate and distinct, integrated circuits.

Claims 2, 10, 11, 13-15, 20, 38, 48-50 and 55 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins. The dependent claims are asserted to be patentable over the cited prior art for at least the reasons recited with respect to their independent claims.

Turning first to independent Claim 10, Applicants claim "a monolithic substrate in which the following circuit components are provided:" The circuits on this monolithic substrate include "an analog-to-digital converter," "a first digital tuner," "a first channel decoding digital module," "a second digital tuner," and "a second channel decoding digital module." Contrary to the claim language, the digital processes in Tomasz are performed on separate integrated circuits (A/D converter 100 and DSP 78) from the tuning circuit 64. Multiple monolithic substrates are used by Tomasz. It therefore does not appear that Tomasz meets this limitation of claim 10.

Again, the Examiner mistakenly relies on the teaching in Tomasz at col. 2, lines 59-62. The cited portion of Tomasz relied upon by the Examiner refers ONLY to the circuitry for the direct conversion of the signal from the received frequency to baseband being on a single substrate. The other processing circuits in Tomasz, such as A/D converter 100 and digital signal processor 78, are performed by other, separate and distinct, integrated circuits.

The Examiner further concedes that Tomasz fails to teach or suggest "an analog-to-digital converter," "a first digital tuner," "a first channel decoding digital module," "a second digital

tuner,” and “a second channel decoding digital module.” For these limitations, the Examiner points to Robbins. Assuming for a moment that Robbins did teach each of these circuits, claim 10 clearly requires that each of these circuits be provided on the same monolithic substrate. As discussed above, this is not taught by Tomasz (which includes separate ICs 62, 100 and 78). Likewise, Robbins appears to teach using separate integrated circuit substrates for the various circuits (DSP 12, DSP 26 and circuit 24). Applicants specifically claim the placement of all the recited circuits on the monolithic substrate. Neither Tomasz nor Robbins teach such an architecture.

The Examiner notes on page 9 of the office action that “it is understood that a plurality of decoders and tuners may be present *in the system* to handle multiple simultaneous signals” (emphasis added). While this may be true with respect to “the system,” the Examiner is ignoring the claim limitation which requires that all those circuits be provided on a monolithic substrate. The teaching in the prior art, as discussed by Applicants in the specification, is to provide separate integrated circuits (i.e., separate substrates) to accommodate such circuitry. Neither Tomasz nor Robbins teach or suggest the claimed invention.

Turning next to independent claim 38, Applicants claim “an integrated circuit embodied on a monolithic substrate and incorporating:” The circuits on this monolithic substrate include “a multi-channel direct sampling type tuner,” “a first channel decoder,” and “a second channel decoder.” Contrary to the claim language, the digital processes in Tomasz are performed on separate integrated circuits (A/D converter 100 and DSP 78) from the tuning circuit 64. Multiple monolithic substrates are used by Tomasz. It therefore does not appear that Tomasz meets this limitation of claim 38.

Again, the Examiner mistakenly relies on the teaching in Tomasz at col. 2, lines 59-62. The cited portion of Tomasz relied upon by the Examiner refers ONLY to the circuitry for the direct conversion of the signal from the received frequency to baseband being on a single substrate. The other processing circuits in Tomasz, such as A/D converter 100 and digital signal processor 78, are performed by other, separate and distinct, integrated circuits.

The Examiner further concedes that Tomasz fails to teach or suggest "a first channel decoder" and "a second channel decoder." For these limitations, the Examiner points to Robbins. Assuming for a moment that Robbins did teach each of these circuits, claim 38 clearly requires that each of these circuits be provided on the same monolithic substrate as each other and with the multi-channel direct sampling type tuner. As discussed above, this is not taught by Tomasz (which includes separate ICs 62, 100 and 78). Likewise, Robbins appears to teach using separate integrated circuit substrates for the various circuits (DSP 12, DSP 26 and circuit 24). Applicants specifically claim the placement of all the recited circuits on the monolithic substrate. Neither Tomasz nor Robbins teach such an architecture.

In view of the foregoing, Applicants submit that independent claims 10 and 38 are patentable over Tomasz and Robbins.

Claims 7 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Lieber. The dependent claims are asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claim 1.

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Hwang. This dependent claim is asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claim 1.

Claims 4-6, 16-18 and 51-53 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins and Hwang. The dependent claims are asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claims 1 and 38.

Claims 21-28, 30-32, 37, 39 and 40-46 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins and Young. The dependent claims are asserted to be patentable over the cited prior art for at least the reasons recited with respect to their respective independent claims.

Turning now to independent claim 21, Applicants claim "a monolithic substrate in which the following circuit components are provided:" The circuits on this monolithic substrate include "a first analog-to-digital converter," "a second analog-to-digital converter," "a first digital tuner," "a first channel decoding digital module," "a second digital tuner," and "a second channel decoding digital module." Contrary to the claim language, the digital processes in Tomasz are performed on separate integrated circuits (A/D converter 100 and DSP 78) from the tuning circuit 64. Multiple monolithic substrates are used by Tomasz. It therefore does not appear that Tomasz meets this limitation of claim 21.

Again, the Examiner mistakenly relies on the teaching in Tomasz at col. 2, lines 59-62. The cited portion of Tomasz relied upon by the Examiner refers ONLY to the circuitry for the direct conversion of the signal from the received frequency to baseband being on a single substrate. The other processing circuits in Tomasz, such as A/D converter 100 and digital signal processor 78, are performed by other, separate and distinct, integrated circuits.

The Examiner further concedes that Tomasz fails to teach or suggest "a first analog-to-digital converter," "a second analog-to-digital converter," "a first digital tuner," and "a second digital tuner." For these limitations, the Examiner points to Robbins. Assuming for a moment that Robbins did teach each of these circuits, claim 21 clearly requires that each of these circuits be provided on the same monolithic substrate as each other. As discussed above, this is not taught by Tomasz (which includes separate ICs 62, 100 and 78). Likewise, Robbins appears to teach using separate integrated circuit substrates for the various circuits (DSP 12, DSP 26 and circuit 24). Applicants specifically claim the placement of all the recited circuits on the monolithic substrate. Neither Tomasz nor Robbins teach such an architecture. Young does not address this issue either.

In view of the foregoing, Applicants submit that independent claim 21 is patentable over the cited art.

Claims 12 and 47 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins and Dapper. The dependent claims are asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claims 1 and 38.

Claims 19 and 54 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins and Leiber. The dependent claims are asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claims 1 and 38.

Claim 29 was rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins, Young and Dapper. This dependent claim is asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claim 21.

Claims 33-35 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins, Young and Hwang. The dependent claims are asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claim 21.

Claim 36 was rejected under 35 U.S.C. 103(a) as being unpatentable over Tomasz in view of Robbins, Young and Lieber. This dependent claim is asserted to be patentable over the cited prior art for at least the reasons recited with respect to independent claim 21.

In summary, each of the independent claims includes a limitation requiring certain further recited circuitry to be embodied on a monolithic integrated circuit. The Examiner mistakenly relies on a teaching from Tomasz concerning placing the downconverter circuitry on a single integrated circuit. This teaching, however, does not reach ALL of the circuitry recited by the independent claims. The Examiner has thus failed to show that the claims are anticipated by Tomasz. Still further, the Examiner has failed to make out the prima facie case for rejecting the claims as obvious in view of the cited prior art.

Applicants reserve the right to address other distinctions over the cited prior art.

CUSTOMER NO. 32914

PATENT APPLICATION
Docket No. 61170-29USPX

In view of the foregoing, Applicants respectfully submit that the application is in condition for favorable action and allowance.

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Respectfully submitted,

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